You don't have to look far for something fun to do this summer. Public tours of the expanded Experimental Breeder Reactor-I Atomic Museum have resumed for the season.

Expanded EBR-I Atomic Museum powers up for summer season

By Lou Riepl and Don Miley, *INL Communications & Governmental Affairs*

Just in time for summer vacationers, a major new exhibit has been completed at Idaho's Experimental Breeder Reactor-I Atomic Museum.

The expansive new three-room addition introduces visitors to one of the most remarkable nuclear reactors ever built — Experimental Breeder Reactor-II. Building on what was learned from the operation of EBR-I, its older sibling, EBR-II stands out for many reasons — operating with an ahead-of-its-time closed fuel cycle, efficiently providing electricity for most INL Site operations for a number of years, and most importantly of all — demonstrating that a reactor can be inherently safe.

New this year to EBR-I, the EBR-II display includes a recreation of the reactor's control room.

The new EBR-II exhibit features dozens of historic photographs, renderings and data panels that bring into focus the amazing design and capabilities of this made-in-Idaho engineering marvel. The middle room of the exhibit is a recreation of the reactor's control room where visitors can get a sense of the technical precision with which the reactor operated during its 30-year service life.

The last room of the museum expansion lets visitors experience the look and feel of being inside the containment dome of EBR-II, the iconic silver dome that has long been part of the INL landscape. Included there is a control panel that was used for refueling activities in EBR-II. There are other artifacts that have been preserved during the decontamination and dismantlement activities at EBR-II and incorporated into the new display. There is even a working intercom system between the reactor operating floor and the control room, brought over from EBR-II.

In addition to artifacts, there are audio and video clips of EBR-II operators and researchers interviewed specifically for the display to capture the historic contributions of the facility and the people. Old EBR-II training films are also part of the audio and video experience.

The new display shares a major chapter in the careers of many current and former employees, and it holds a special meaning for them. Whether they were operators, researchers, technicians or secretaries, EBR-II was their life for many years. The reactor's accomplishments are still a source of pride for all of them, no matter what position they held.

Darrell Pfannenstiel started at EBR-II in 1977 as a nuclear power plant operator trainee, and was a shift supervisor in 1994 when EBR-II was shut down for the last time. One of his many sources of pride is the story the new exhibit will tell, which he characterizes as, "a straightforward explanation of how the EBR-II reactor was proven to be inherently safe during a complete loss of electrical power with the reactor at 100 percent power." Today, Pfannenstiel is a senior staff specialist for Materials and Fuels Complex Nuclear Operations, providing technical support and coordination during the decontamination and dismantlement of EBR-II.

Pfannenstiel also had input on the new display. He explained that control room visitors "…will be able to actually interact with the display to 'control reactor power' very much like it was done at EBR-II, which will show it is really not that difficult."

Beyond the opening of the new EBR-II exhibit wing, 2011 is a special year for the EBR-I Atomic Museum — and all of Idaho. This year marks the 60th anniversary of a technological achievement of truly global proportions — generation of the world's first usable amount of electricity from a nuclear reactor. That reactor was Idaho's own Experimental Breeder Reactor-I, and the day it made history was December 20, 1951.

Other stand-out aspects of the EBR-I Atomic Museum are exhibits featuring remote handling tools

used by workers in the nuclear industry, devices used to detect radiation — including that which exists naturally in our environment, and two other exhibit elements so large, they have to be kept outside in the parking lot. These latter elements are the prototype nuclear reactors that would have powered jet engines, developed during the Cold War to power aircraft that could remain airborne for extended periods without refueling. This particular research project never got off the ground.

The EBR-I Atomic Museum is located 18 miles east of Arco on Highway 20/26. Admission is free and the facility is open from 9 a.m. to 5 p.m. seven days a week from Memorial Day weekend through Labor Day weekend. Guided or self-guided tours are available. Also worth checking out is the nearby Craters of the Moon National Monument, an easy 40-45 minute drive to the west of EBR-I on Highway 20/26.

For more information, hours of operation, or a virtual tour, visit http://www.inl.gov/ebr/.

Developed during the Cold War, these reactor prototypes were intended for use in a nuclear-powered airplane.

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